

REMARKS

The Examiner's Action of March 24, 2003 has been received and its contents carefully considered. Reconsideration is respectfully requested in view of the amendments and the following comments.

Claims 10-17 remain in the application. Claims 12 and 14 have been amended. Claims 1-9 have been cancelled without disclaimer or prejudice of the subject matter thereof for being directed to a non-elected invention.

I. Election/Restriction Requirement

On February 27, 2003, the Examiner required restriction via telephone to one of the following inventions:

- I. Claims 1-9, drawn to a method of manufacturing a space transformer, classified in class 29, subclass 830; and
- II. Claims 10-17, drawn to a space transformer, classified in class 174, subclass 250.

Applicant affirms the election made by Shawn O'Dowd (Reg. 34,687) with traverse of Group II, claims 10-17 during the above telephone conversation.

The above election was made with traverse. It is respectfully submitted that the above claims should be examined together. Although classified in different classes and subclasses, there are common limitations between independent claims 1 and 10, and it is thus submitted that the searches would overlap.

Accordingly, Applicant respectfully requests that the restriction requirement be withdrawn and that all claims in this application be searched and examined on the merits.

II. Objections to the Drawings

The drawings have been objected to for not containing cross-hatchings where required. In response, proposed drawing changes have been effected in red ink to attached copies of the figures to show the parts shown in section as being cross-hatched as depicted on page 600-114/³⁵115 of the MPEP. Approval of the above proposed drawing changes is respectfully requested. Formal drawings will be submitted upon the receipt of a Notice of Allowance.

III. Objections to the Disclosure

The disclosure has been objected to for containing a number of informalities. In response, the specification has been amended where necessary with the Examiner's comments having been taken into account. Withdrawal of the objection to the specification is therefore respectfully requested.

IV. Rejections under 35 U.S.C. § 112, Second Paragraph

Claims 12, 14 and 16 have been rejected under the second paragraph of Section 112 for being indefinite. Reconsideration is respectfully requested.

Claims 12 and 14 have been amended to no longer recite the language objected to by the Examiner.

Regarding claim 16, that claims recites the the means are "disposed in the inner region located between the first silicon layer and the second silicon layer." As set forth in the specification at page 14, paragraph 00032, an example of the means for providing comprises the layer of copper 8 shown in Fig. 3a, including the copper disposed in the vias 14. Similar to claim 10, which contains the same language with respect to the "electrically conductive material," it is

not necessary for the entirety of the means for providing to be disposed in the inner region in order for the quoted expression above to hold true.

In view of the above, it is submitted that claims 12, 14 and 16 are definite, and the Examiner is respectfully requested to reconsider and withdraw his rejection of those claims under the second paragraph of Section 112.

V. Rejection under 35 USC § 102(c)

Claims 10-12 have been rejected under Section "102(c)" as being anticipated by Van Pham (hereinafter "Van"). Reconsideration is respectfully requested in view of the following comments.

Van has an issue date of October 16, 2001, while the instant application was filed on February 14, 2002. To the extent that Van issued before the filing date of the instant application, and less than one year before that date, and assuming arguendo that Van is applicable to the claims directed to embodiments of the present invention as a Section 102 reference (which it is not as set forth below), it should have been applied under subsection (a) of Section 102. As a result, for the purposes of the instant Response, it will be assumed that the above rejection was made under Section 102(a) rather than Section 102(e).

Van is directed to an interposer 10 for electrically coupling a semiconductor die 50 to a substrate 70. The body 12 of interposer 10 is made of a dielectric material having a contact surface 14 and an opposed bonding surface 16. A plurality of contact pads 18 are arranged about the periphery of the contact surface 14, and a plurality of bonding pads 20 are arranged across the bonding surface 16. A plurality of conduits 22 are disposed generally within the body of the interposer connecting respective ones of the contact pads 18 with the bonding pads 20.

Claims 10-17 are directed to a space transformer. Van does not disclose (or even remotely suggest) a space transformer, but rather an interposer. However, a space transformer and an interposer have different structures, functions, and therefore different design requirements. An interposer is a rerouting board for connecting ICs and mother boards. On the other hand, a space transformer is a device that allows testing of an IC by connecting it to a test card printed circuit board, translating the macro pitch scale of the IC to the micro pitch scale of a test system on a land-grid array side of the space transformer. In the context of embodiments of the present invention, "land grid array" geometries refer to the size and spacing of surface features of the space transformer, typically measured in mils (10^{-3} inch) as opposed to semiconductor geometries which are typically measured in microns. The space transformer allows interconnection between these two scales. Use of silicon for a space transformer is neither disclosed nor suggested in Van, contrary to embodiments of the present invention as recited in independent claim 10.

Accordingly it is submitted that independent claim 10 is patentable over Van. Additionally, it is submitted that dependent claims 11 and 12 are patentable over Van for being dependent from independent claim 10, and further for the particular additional features that they recite.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw his rejection of the claims based on Section 102.

VI. Rejection under 35 USC § 103(a)

Claims 13-17 have been rejected under Section 103(a) as being obvious over Van in view of Petrarca et al. Reconsideration is respectfully requested in view of the following comments.

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Claims 13 depends from independent claim 10 discussed in Section IV above.

Independent claims 14 and 16 are, similar to independent claim 10, both directed to a space transformer made at least partially of silicon. Claim 15 depends from independent claim 14, and claim 17 depends from independent claim 16. As discussed above, however, Van does not disclose, or even remotely suggest a space transformer comprising a silicon medium or layers of silicon, but is rather directed to an interposer. Accordingly, Van is inapplicable to embodiments of the present invention as recited in claims 13-17 in the first instance. Additionally, Petrarca et al. does not overcome the deficiencies of Van.

In view of the above, it is submitted that claims 13-17 are patentable over Van in view of Petrarca et al., and the Examiner is therefore respectfully requested to reconsider and withdraw his rejection of those claims based on Section 103(a).

CONCLUSION

For all the above reasons, the Applicant respectfully submits that this application is in condition for allowance. A Notice of Allowance is earnestly solicited.

The Examiner is invited to contact the undersigned at (202) 220-4296 to discuss any matter concerning this application. The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 11-0600.

Respectfully submitted,
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By: 

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